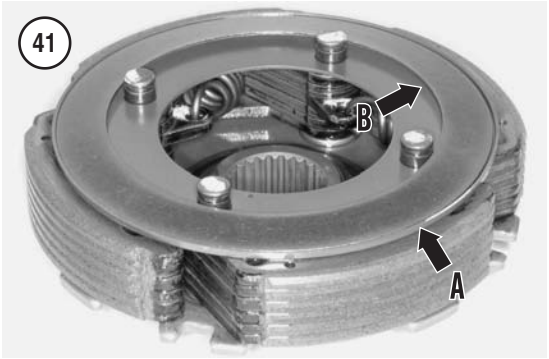
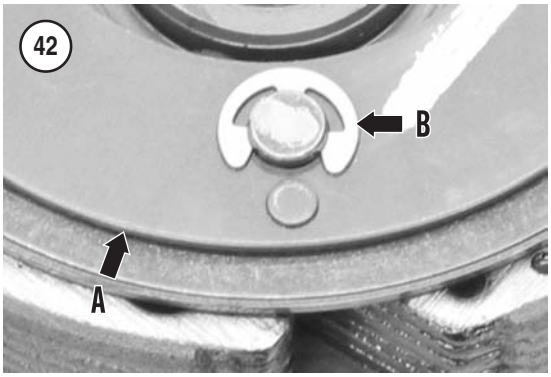
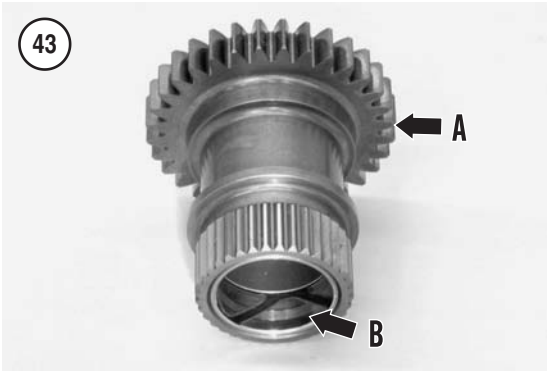
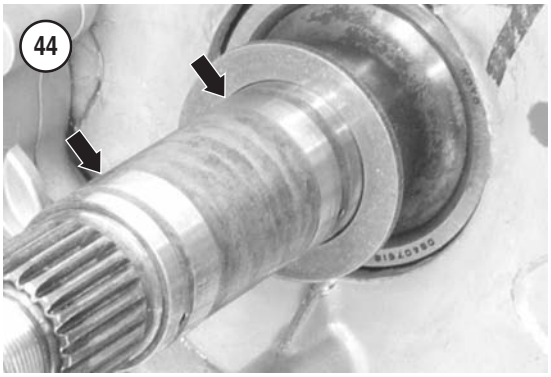








g. Remove pressure from the drive plate and Make sure the outer washer seats evenly against each E-clip.

Primary Drive Gear Inspection

Refer to **Table 2** when measuring the primary drive gear components in this section. Replace parts that are out of specification or damaged.

1. Clean and dry the primary drive gear and washer.
2. Examine the primary drive gear (A, **Figure 43**) for:
   a. Worn or damaged gear teeth or splines.
   b. Scored or damaged outer bearing surface.
   c. Worn or damaged bushings.
3. Measure the inside diameter of the bushing (B, **Figure 43**) at each end of the gear. Replace the primary drive gear if either bushing diameter is out of specification.
4. Measure the crankshaft outside diameter at the two drive gear bushing operating locations shown in **Figure 44**. Replace the crankshaft if either dimension is out of specification.

CHANGE CLUTCH

The change clutch (B, **Figure 23**) can be removed with the engine installed in the frame.

Refer to **Figure 45** when servicing the change clutch assembly.

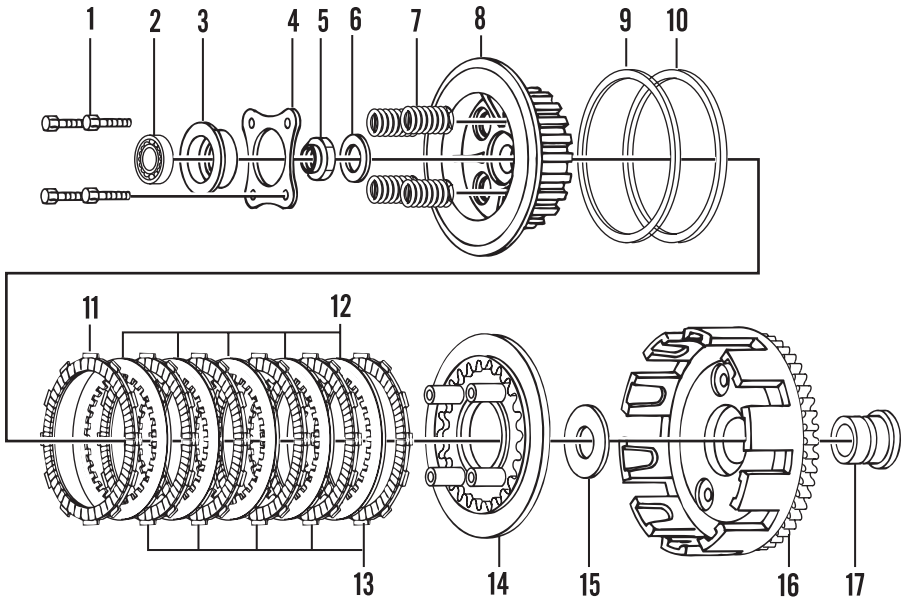
Special Tools

Before removing the clutch locknut, note the following:

1. The clutch locknut (**Figure 46**) is staked to a notch in the mainshaft. Purchase a new locknut for reassembly.
2. When loosening and tightening the clutch locknut (**Figure 46**), some means of holding the change clutch will be required. The following list suggests methods for holding the clutch.
   a. The Honda clutch center holder (part No. 07JMB-MN50300 [**Figure 47**]) is designed to hold the clutch when the clutch locknut is loosened and tightened.
   b. Use an air impact wrench and air compressor. This tool setup can be used to loosen the clutch locknut. However, when tightening the

45

CHANGE CLUTCH



1. Bolt
2. Lifter bearing
3. Holder
4. Lifter plate
5. Locknut
6. Washer
7. Spring
8. Clutch center
9. Spring seat plate (FE/TE models)
10. Judder spring (FE/TE models)
11. Friction plate*
12. Metal plate
13. Friction plate
14. Pressure plate
15. Washer
16. Clutch housing
17. Clutch guide

*See text.

locknut during clutch assembly, a separate tool setup will be required to hold the clutch so that the clutch locknut can be tightened with a torque wrench. See substep c.

c. Use a separate gear (**Figure 48**) to lock the clutch outer gear to the primary drive gear.

Removal/Disassembly

1. Remove the clutch lever assembly as described in this chapter.

2. Remove the centrifugal clutch as described in this chapter.

3. Remove the lifter bearing and holder (A, **Figure 49**).

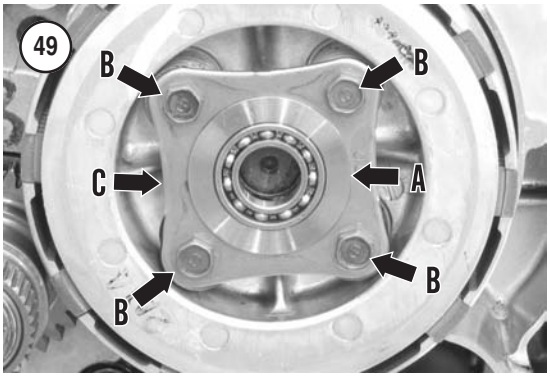
4. Loosen the lifter plate bolts (B, **Figure 49**) 1/4 turn at a time in a crossing pattern. Remove the bolts, lifter plate (C, **Figure 49**) and clutch springs.

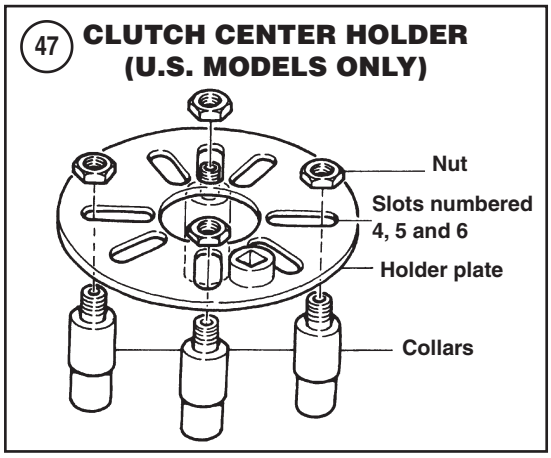
NOTE

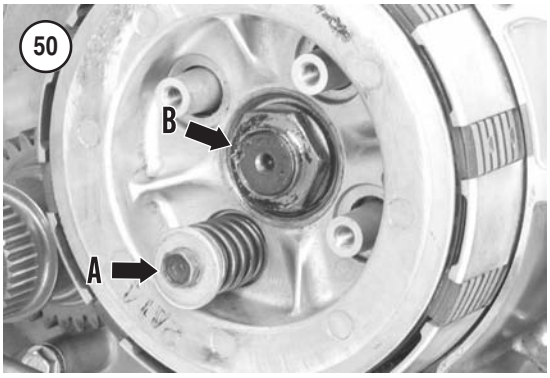
*If clutch plate service is not required, keep the clutch assembled with a clutch spring, flat washer and clutch bolt as shown in A, **Figure 50**.*

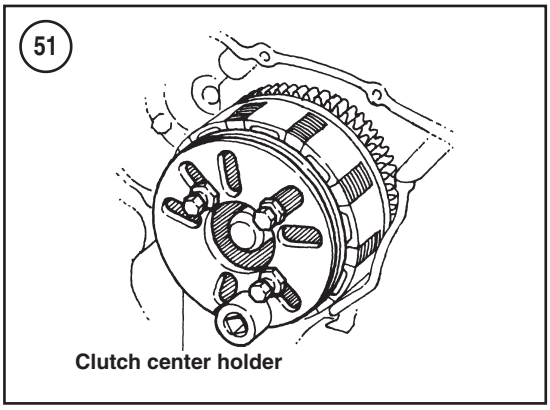
CAUTION

Be sure to unstake the clutch locknut where it contacts the mainshaft. This









will prevent the nut from damaging the mainshaft threads as the nut is being removed.

5. Using a die grinder or other metal removal tool, unstake the clutch locknut from the groove in the mainshaft (B, **Figure 50**). Cover the parts so metal particles do not enter the clutch or engine.

6. Lock the clutch center using one of the methods listed under *Special Tools* in this section. Loosen and remove the clutch locknut and washer.

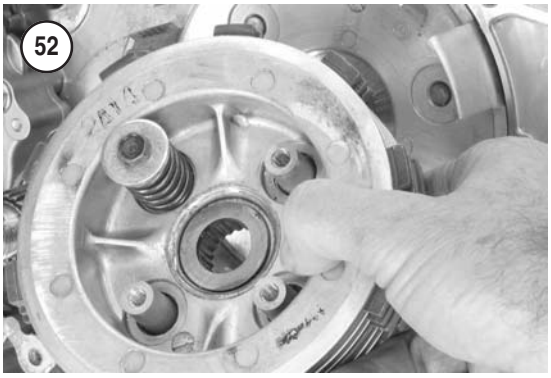
NOTE

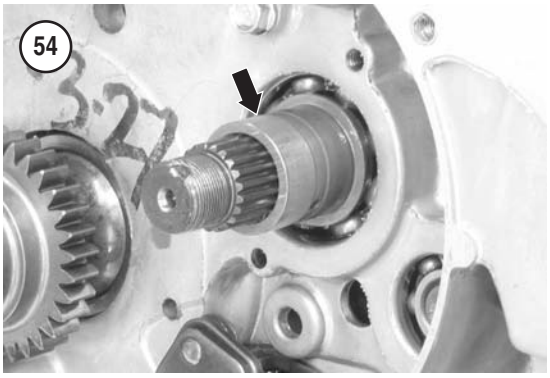
Figure 51 *shows the Honda clutch center tool being used in a typical situation.*

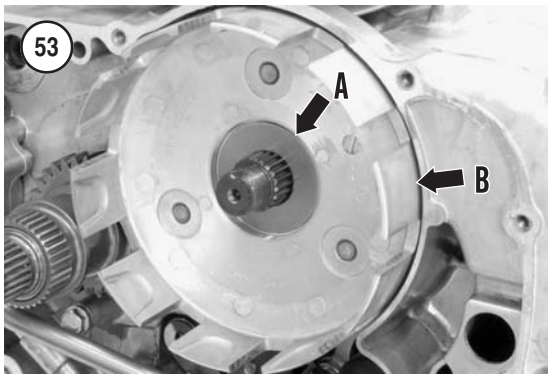
7. Remove the clutch center, clutch plates and pressure plate assembly (**Figure 52**).

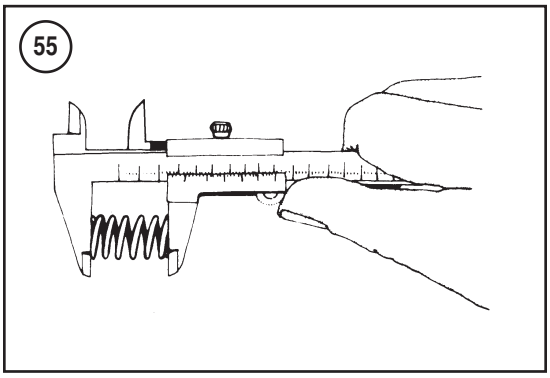
8. Remove the flat washer (A, **Figure 53**) and clutch housing (B).

9. Remove the clutch guide (**Figure 54**).





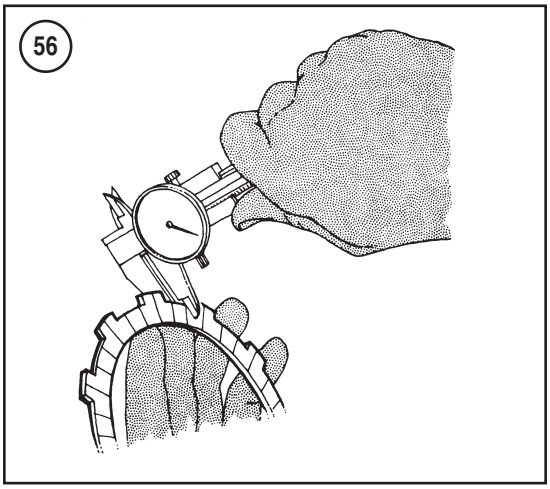


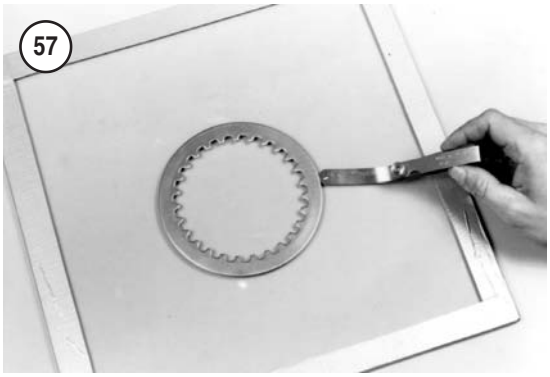


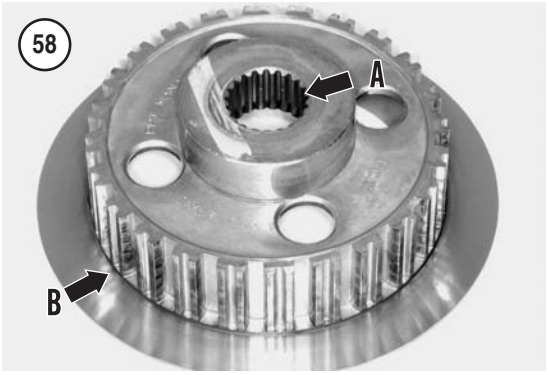
Inspection

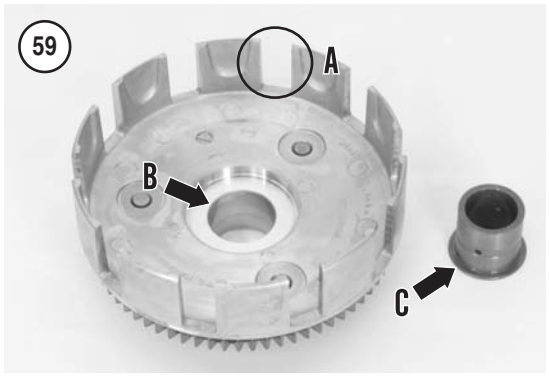
Refer to **Table 3** when measuring the change clutch components (**Figure 45**) in this section. Replace parts that are out of specification or damaged.

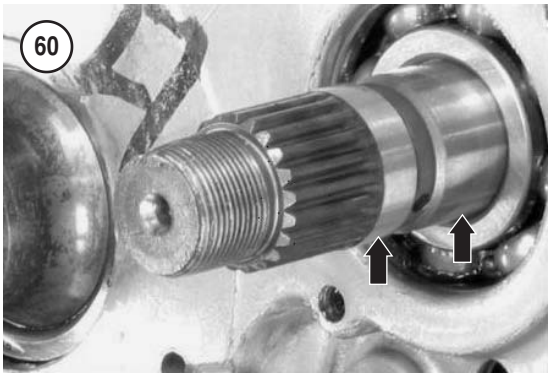
1. Clean all parts in solvent and dry them with compressed air.
2. Measure the free length of each clutch spring (**Figure 55**) with a vernier caliper. Replace the springs as a set if any spring is too short.
3. Measure the thickness of each friction plate at several places around the plate (**Figure 56**). Replace all friction plates as a set if any one plate is too thin or damaged. Do not replace only one or two plates.
4. Place each clutch metal plate on a surface plate or a thick piece of glass and measure warp with a feeler gauge (**Figure 57**). Replace it if it is out of specification.
5. Examine the clutch center splines (A, **Figure 58**) and plate grooves (B) for cracks or excessive wear.
6. Examine the clutch housing outer slots (A, **Figure 59**) for grooves, steps, cracks or other damage. The slots must be smooth for proper clutch operation. Repair light damage with a fine-cut file or oilstone. Replace the clutch housing if the damage is not repairable.
7. Examine the clutch housing bore (B, **Figure 59**) for excessive wear or damage.
8. Examine the clutch housing gear for damaged gear teeth.
9. Examine the clutch guide (C, **Figure 59**) inside and outside surfaces for cracks, deep scoring or

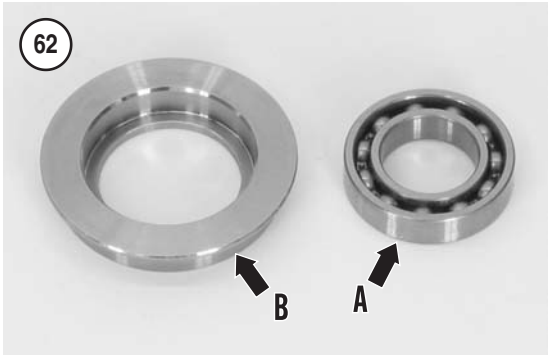












other damage. If there is no visible damage, measure the clutch guide inside and outside diameters. Replace it if either dimension is out of specification.

10. Measure the mainshaft diameter where the clutch guide operates (**Figure 60**). Replace the mainshaft if it is out of specification.

11. Examine the pressure plate (**Figure 61**) for thread damage, cracked spring towers or other damage.

12. Check the lifter bearing (A, **Figure 62**) by turning the inner race. The bearing should turn smoothly with no signs of roughness or damage. Examine the holder (B, **Figure 62**) for damage.

Assembly/Installation

Refer to **Figure 45**.

1. Lubricate the mainshaft and all clutch parts with engine oil.

CAUTION

Never assemble the clutch without lubricating the clutch plates with oil, especially if the clutch was cleaned in solvent or new plates are being installed. Otherwise, these plates may

grab and lock up when the engine is first started and cause clutch damage.

NOTE

If the clutch plates were not separated from the clutch center and clutch housing, go to Step 3.

2. Assemble the clutch plates, clutch center, and pressure plate as follows:
   a. Place the clutch center (**Figure 63**) on the workbench.
   b. Lubricate the friction and clutch metal plates with engine oil.
   c. On FE and TE models, install the spring seat (A, **Figure 64**) and judder spring (B) onto the clutch center. The cupped side of the judder spring must face out.
   d. On FE and TE models, identify the friction plates. There is one plate (A, **Figure 65**) with a larger inner diameter and five plates with a smaller inner diameter (B).

NOTE

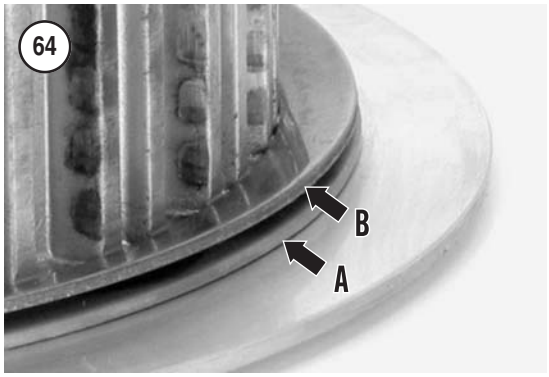
On FE and TE models, the friction plate must fit around the judder spring and spring seat.

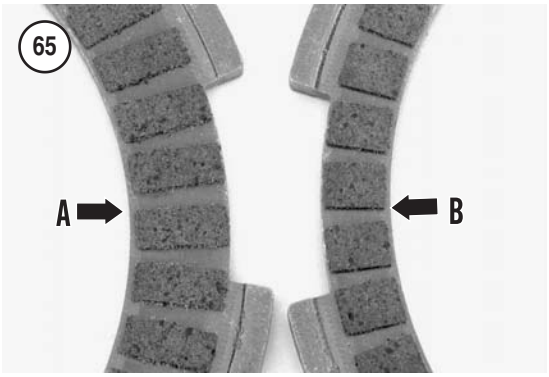
   e. On FM and TM models, install a friction plate, then install a clutch metal plate. Continue until all of the plates are installed. The last plate installed is a friction plate (**Figure 66**).
   f. On FE and TE models, install a small inner diameter friction plate (B, **Figure 65**), then install a clutch metal plate. Continue to install the plates, installing the large inner diameter plate (A, **Figure 65**) last. See **Figure 66**.
   g. Install the pressure plate (**Figure 67**) and seat it against the outer friction plate. Make sure the friction plate tabs engage with the clutch center splines and the clutch center sits flush against the friction plate as shown in **Figure 68**.

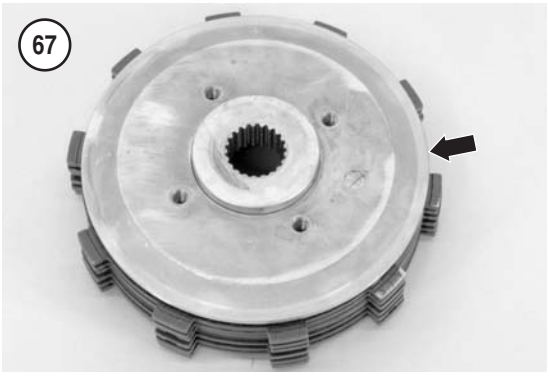
NOTE

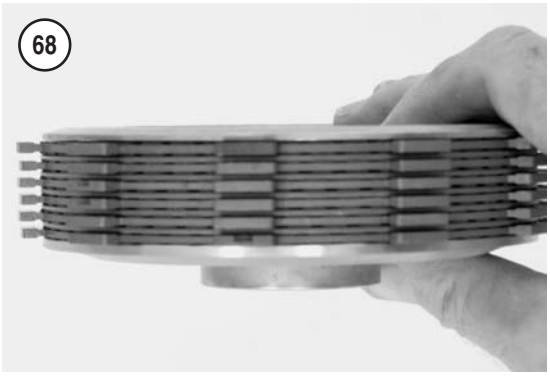
Substep h will align the clutch plates with the clutch center. Aligning the clutch plates now will make it easier to install the clutch plate assembly later in this procedure.

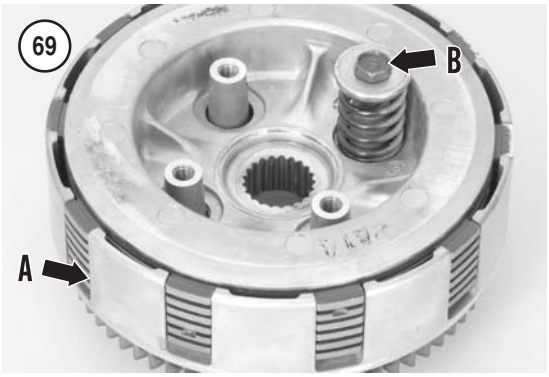
   h. Align the friction plates with the clutch outer housing, then install the clutch plate assembly into the clutch outer housing (A, **Figure 69**).

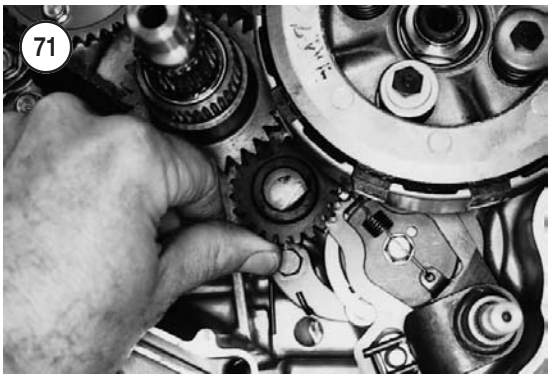












i. After properly aligning all of the friction plates, install one clutch spring, a flat washer and clutch spring bolt as shown in B, **Figure 69**. Tighten the bolt to hold the clutch plate assembly together, then remove the clutch plate assembly from the clutch outer housing.

j. Make sure all of the friction plates are properly aligned and the pressure plate seats flush against the outer friction plate (**Figure 68**).

k. Set the clutch plate assembly aside until installation.

3. Install the primary drive gear and washer as described in this chapter if they were removed.

4. Slide the clutch guide—shoulder side facing in—onto the mainshaft (**Figure 54**).

5. Install the clutch housing (B, **Figure 53**) onto the mainshaft and seat it on the clutch guide.

6. Install the large washer (A, **Figure 53**) onto the mainshaft and seat it against the clutch housing.

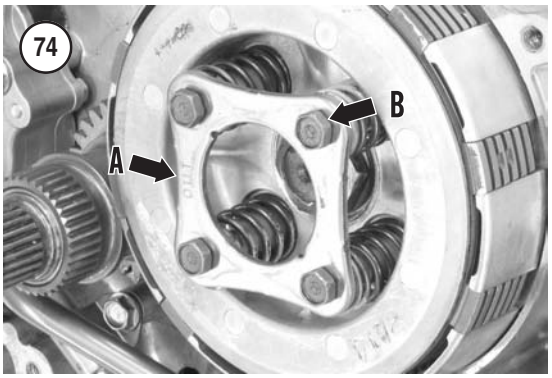
7. Mesh the clutch center (**Figure 52**) with the mainshaft splines and slide the clutch center into the clutch outer housing. See **Figure 50**.

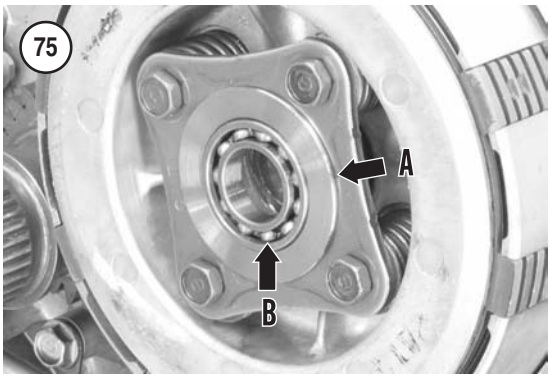
8. Install the lockwasher (**Figure 70**) onto the mainshaft and seat it against the clutch center.

9. Using one of the methods described under *Special Tools*, lock the clutch center to the clutch housing. Note the following:

a. When using a gear to lock the clutch housing gear to the primary drive gear, install two or more clutch springs, flat washers and bolts (A, **Figure 50**) to prevent the clutch center from slipping when the clutch locknut is tightened.

b. **Figure 71** shows typical use of the separate gear to lock the clutch housing gear to the primary drive gear.





c. When using the Honda clutch center holder tool (**Figure 51**), first remove the clutch bolt, washer and clutch spring set that were installed during Step 2.

10. Tighten the change clutch locknut (B, **Figure 50**) to 108 N•m (80 ft.-lb.).
11. Remove the tool setup installed in Step 9.
12. Using a punch, stake the locknut shoulder into the mainshaft notch. See **Figure 72**.
13. Remove the clutch spring bolts and flat washers if they were not already removed.
14. Install the clutch springs (**Figure 73**).
15. Install the lifter plate (A, **Figure 74**) with its OUT mark facing out.
16. Install the four clutch spring bolts (B, **Figure 74**) in a crossing pattern in several steps. Tighten the bolts to 12 N•m (106 in.-lb.).
17. Install the holder (A, **Figure 75**) and lifter bearing (B). Lubricate the lifter bearing with oil.
18. Install the centrifugal clutch as described in this chapter.
19. Install the clutch lever assembly as described in this chapter.

Table 1 CENTRIFUGAL CLUTCH SERVICE SPECIFICATIONS

	New mm (in.)	Service mm (in.)
Clutch drum inside diameter	126.0-126.2 (4.96-4.97)	126.4 (4.98)
Weight lining thickness	2.0 (0.08)	1.3 (0.05)
Clutch spring plate height	2.87 (0.113)	2.73 (0.107)
Clutch weight spring free length	25.8 (1.02)	26.9 (1.06)

Table 2 PRIMARY DRIVE GEAR SERVICE SPECIFICATIONS

	New mm (in.)	Service limit mm (in.)
Crankshaft outside diameter at drive gear	26.959-26.980 (1.0614-1.0622)	26.93 (1.060)
Primary drive gear bushing inside diameter	27.000-27.021 (1.0630-1.0638)	27.05 (1.065)

Table 3 CHANGE CLUTCH SERVICE SPECIFICATIONS

	New mm (in.)	Service limit mm (in.)
Clutch spring free length		
FE/TE	31.3 (1.23)	30.2 (1.19)
FM/TM	28.0 (1.10)	27.0 (1.06)
Friction plate thickness	2.62-2.78 (0.103-0.109)	2.3 (0.09)
Clutch metal plate warp	–	0.20 (0.008)
Clutch outer guide		
Outside diameter	27.959-27.980 (1.1007-1.1016)	27.92 (1.099)
Inside diameter	22.000-22.021 (0.8661-0.8670)	22.05 (0.868)
Mainshaft outside diameter at outer guide	21.967-21.980 (0.8648-0.8654)	21.93 (0.863)

Table 4 CLUTCH TORQUE SPECIFICATIONS

	N•m	in.-lb.	ft.-lb.
Centrifugal clutch locknut	118	–	87
Change clutch locknut	108	–	80
Clutch cover bolts	12	106	–
Oil hose bracket bolts	12	106	–